TABLE 2.—Instrumental seismological reports, October, 1920—Contd.

Date.	Char-	Phase.	Time.	Period	Ampl	itude.	Dis-	Remarks.					
~	acter.			т.	A _M A _N		tance.						
CANADA. Dominion Meteorological Service, Victoria.													
1920.		Р	H. m. s.	Sec.	μ	μ	Km.	Dushahlu Alaska					
):t. 1		М	19 10 10 19 12 37		*1,000		1,400	Probably Alaska					
-		F	19 21 28	•••••		•		Danden Island as					
5		М	19 10 51 19 12 49		*400			ported quake a					
		F	19 17 15	•••••	•••••	•	8,300?	Pender Island re ported quake a 12:35 p. m. Pacif Stand. Time.					
7	•••••	<u>s</u>	21 06 18 21 15 53	•••••		•••••	0,0001						
	•	M	21 29 10 21 34 05		*500	•••••	<u> </u>						
		F	22 35 27										
8		S? L?	17 07 47 17 12 17										
,	,	L	17 14 29 17 17 05	·····	*300								
		F	17 37 23										
12		P	7 43 56 7 47 23										
		M	7 53 46 7 58 41		*200								
i 5		.r	14?56 12										
		M	14 58 40 15 07 02		*500								
18		P	8 15 58										
		§	8 21 02 8 28 25										
		M	8 36 46		*1,000		3, 170						
18		F	10 03 20 12 14 00	•••••									
10		м	12 15 14		*200								
18	İ	F	12 17 27 12 52 20				450	Merged into ne					
10		м	12 53 19		*500			quake.					
		İ	1	VERTI- CAL.									
		$ _{P}$	12 53 10	2		<u> </u>	520						
	Ì	L M	12 54 25 12 54 25	10	·	3							
		F	18702 00										
18		P	13 01 12 13 02 41		*1,000		660						
		F	13 12 01										
	1			VERTI-									
		P	13 02 00	2.5	 	 .	840	Į					
		L	18 04 00 18 04 15	5	·····;								
	1	F	13 14 00		 -			1					
20		M	10 43 12 11 00 25		*200								
	1	F	11 33 22	······	·····		.						
22		Sor L.											
		M	12 57 35 13 43 20		*500	•••••							
23								Clock stopped.					
26		. P	19 30 29				.						
	1	M	19 31 58 19 33 26 19 34 25		*200								
28		F					·····						
28		M	7 36 31 7 44 23		*400		: ::::::						
00		P?	8 29 38		•	· ·····	·						
28			or 08 03 13 12 58			.	.	Press dispatche					
		S or L.	13 12 58 13 13 08					say 900 mile from La Plata.					
		MeL	13 13 57 13 20 40		*500								
28		P											
		L	13 31 39 13 35 35 13 40 01 15 20 50		*1,100			}					
		F	15 20 50	[.							
								1					

Reports for October, 1920, have not been received from the following stations:

ALASKA. U.S. C. & G.S. Magnetic Observatory, Sitka. ARIZONA. U.S. C. & G.S. Magnetic Observatory, Tucson. HAWAII. U.S. C. & G.S. Magnetic Observatory, Honolulu.

KANSAS. University of Kansas, Lawrence.

MARYLAND. U. S. C. & G. S. Magnetic Observatory, Cheltenham.

MASSACHUSETTS. Harvard University, Cambridge.
MISSOURI. St. Louis University, St. Louis.
NEW YORK. Canisius College, Buffalo; Fordham University, New

Porto Rico. U.S. C. & G.S. Magnetic Observatory, Vieques.

SEISMOLOGICAL DISPATCHES.

[Collected by Earthquake Station, Georgetown University, Washington, D. C.]

Clarmont-Ferrant, France, October 4.—An earth shock was felt this morning in the vicinity of Issoire, Department of Puy-de-Dome. The tremors lasted only a few seconds and no damage was reported.—Associated Press.

London, October 8.—Two violent earth tremors were

felt in Mantua, Northern Italy, at midnight Wednesday, according to a telegram to the Rome Epoca, says a Central News dispatch from Rome, dated Thursday. The inhabitants fled into the streets in alarm. The message reported some property damage had been caused.— Associated Press.

Mexico City, October 9.—Reports received here of an earthquake yesterday in Northwestern Vera Cruz say

there were no casualties.—Associated Press.

Vera Cruz, October 9.—Northwestern sections of the State of Vera Cruz were severely shaken by an earthquake at 10:30 o'clock yesterday morning. The regions of Cordoba, Jalapa, Teccele, Cosautlan and the entire district which was visited by the earthquake disaster of last January felt the full strength of the shock. No casualties had been reported, but property damage was said to be heavy.—Associated Press.

Manila, P. I. October 10.—A severe earthquake to-day at Baguis, capital of Bengust, Province of Yuzon, about 150 miles north of here, damaged the observatory there, broke water mains on the military reservation and cracked a number of concrete walls. A landslide occurred as a result of high water in the river at Baguio. No loss of life was reported. The shock was felt slightly in Manila.—Associated Press.

Toulouse, France, October 20.—Earthquake shocks were felt yesterday in several places in the Hautes Pyrennese Department.—Associated Press.

Granada, Spain, October 23.—An earthquake shock lasting 10 minutes was felt at 6 o'clock Friday evening throughout the Province. Damage was done in some villages, but it has not been ascertained as yet whether there were any casualties.—Associated Press.

Redding, Calif., October 27.—Lassen Peak was in pronounced eruption to-day. For more than half an hour, beginning at 2:40 p. m., black smoke rolled out of the northern part of the crater. To-day's eruption was the

second outpouring in less than a week. A substantial outbreak occurred Saturday.—Associated Press.

Valparaiso, October 28.—Violent earthquake shocks with a vertical movement shock the Provinces of Atacama and Coquimbo, north of this city, at 8:05 o'clock this morning, the tremors lasting 21 minutes. The cities of Copiape and Valanar, in the Province of Atacama, were most seriously shaken, old structures in both towns being damaged. Reports received here state no one was injured during the earthquake.—Associated Press.

NEWSPAPER CLIPPINGS.

[By the Associated Press.]

Washington, October 22.—An earthquake shock of considerable intensity was recorded by the seismograph of the Georgetown University at 7:19 o'clock this morning, continuing for nearly an hour. It is estimated that the center of the disturbance was 4,300 miles from Washington.

Buenos Aires, October 28.—El seismografo de la Universidad de la Plata ha registrado un fuerte terremoto a las 8.52 minutos. Se estima que el centro del disturbio esta situadoa a 1,400 kilometros de distancia.

LATE REPORTS.

TABLE 2.—Instrumental reports.

Date.	Char-			Period	Amplitude.		Dis-	Remarks.	Date.	Char- acter.	Phase.	Time.	Period	Amp	litude.	Dis-	Remarks.
	acter.	Phase.	Time.	T.	An	An	tance.	nemarks.		acter.			т.	A	A _N	tance.	
	-	ALABA	MA. S	p <i>ring I</i>	Hill Co	ollege,	Mobil	2.	Arizo	ONA.	U. S. C	. & G. I	S. Mag	metic	Observ	atory,	Tucson—Con.
1920. July 7		P _N	H. m. s. 18 06 48 18 11 30	Scc.	μ	μ	Km.	N component un-	1920. Sept. 24		P	H. m. s. 22 02 15 22 02 18	Sec.	μ	μ	Km.	
July ,		M _N	18 11 30 18 20 00					damped; no trace on EW.; time			PR PR PR	22 03 43	4		: :: ::::		
	<u> </u>			<u> </u>	<u> </u>			uncertain.			eS _N	22 03 50 22 08 11 22 08 14					
Dr	STRICT	of Col	UMBIA.	Georg	etown	Univ	ersity,	Washington.			eLn Ln Mn	22 08 14 22 13 45 22 14 45 22 15 27	9	20			
1920.			H. m. s.	Sec.	μ	μ	Km.				Mn Cn	22 17 27 22 18 22 19	8				
Sept. 7		eL	6 26				•••••			İ	F _N	22 27 22 28					
8		en?	2 06 33 2 06 16						27		e _N	1					
		Sn?	2 10 42 2 11 45								em	5 27 10 5 27 38 5 28 27 5 28 23 5 28 58 5 29 34 5 30 38 5 32 30			-		
		S _N ?	2 11 54 2 20 44								L _m	5 28 23 5 28 58		250			
	1	eLm Lm	2 21 30 2 45 16	22 22							M _N	5 29 34 5 30 38					
	1	F	3 30		-	·				\	C _N	5 32 30	7				
9		eL	19 58 20 01 24	24							F _N	5 45 5 52	6				
		F	20 45						29		em	12 00 57	ļ		.		
20		. ePm	14 57 55			·		No distinct M on MS.]	eL _E	12 01 04 12 01 30] <u>.</u>			
	İ	im	15 06 22					MG.			M _m	12 02 29 12 02 50	6 6	20			
	}	eSn	15 09 17 15 09 17							1	C _N	12 03			-		
	1	eLm	15 28 24 15 29 18								F _N	12 05 12 06					
	1	Las	15 38 15 38 14	27 22						<u> </u>	1 4	12 00	<u> </u>	<u> </u>	-		
		M=1	14 57 55 14 57 55 15 06 22 15 09 17 15 09 17 15 28 24 15 29 18 15 38 15 38 14 15 41 00 15 48 00	24	*2,000 *2,200				ĦΔ	WATT	II S	C & G	8 1	faanet	ic Ohse	rnatori	y, Honolulu.
		F	17 45										~				
	1	1	1	VER	TICAL,	1			1920.	Ì	_	H. m. s.	Sec.	μ	μ .	Km.	 _
		es	14 58		.				Sept. 1		L	3 08 00 3 13 00	17	*100			Tremor.
	ł	eLs	14 58 15 09 30 15 28 24 15 37 35 15 44 26	22							C	3 17 3 22					
	1	M _z	15 37 35 15 44 96	24		*900				3	L	3 42 54			1		Tremor.
01	1	F	17 20				-				M	3 45 00 3 53	17	*100			
21		- 6a	18 05 14								F	3 56					
24		ePm	22 01 43 22 01 43 22 07 04 22 07 07					Heavy micros.		8	. P	1 54 24	17		-		Clock stopped 2.22, and remainder of record lost; L
	1	Sm	22 07 04		.		.			į	P iS eL M	2 00 36				.	of record lost; L
	1	eL	.) 22 10 06	10						İ				} -		i	difficult to place.
	}	F	22 33	19						9	. eP eS	19 04 48 19 12 18 19 21 00 19 26 48	20 17				L difficult to place.
27	′	. ев ем	5 42 5 42		-			. Do.			eL	19 21 00 19 26 48	18 16	*i. 700	<u> </u>	······	
	1	S=?	. 5 45 17	`	·		-				<u>⊆</u>	19 58 22 04	17 20				.[
	<u> </u>	F	6 00		1		1	<u>'</u>		10			1		1		Slight record.
				~ ~	1/	AZ		<i>(Th</i>		10	eL	22 21 36 22 26 00 22 32 00		#100			onghi rooma
F	LRIZON.	A. U.	s. c. œ	G. S.	мадпе	iuc vo	servato	ry, Tucson.		1	C	22 37 23 12	17]
1920.	Ī	T	H. m. s.	Sec.	μ	Ι μ	Km.					1				1	T 1_31_41
Sept.	в	ePa	. 1 58 20)		-		L waves not dis tinguishable.		20	PR	14 48 36 14 51 24	16 16				L indistinguish able from the 8
	-	eSm	. 2 08 37	' .				· mgusuante.		ł	is	. 14 56 18	: 16	. . .	·:		waves.
	1	iS _N	. 217		_	. 40		-		l	M	. 15 10 00	17		00		
2		F	. 3 09	4		1		. Phases well			F	16 28 21 56	17			-	
- 4	· · · · · ·	Sn	. 15 02 50	5	i		-	_ marked.	21		eP	2 51 24 2 58 36	·	<u>- </u>		-	
		Sa Ļa	. 15 21 05	34	.			-			M	3 09 12	18		5	-	
		M _N	. 15 22 35 . 15 28 30	23 18 18 18 17 16		. 10	5	-			Ç	3 12 30 3 47 12	i		:	1::::::	:
	1	M _m	. 15 32 18 . 15 33 .	17	80			<u>: </u>	21		e	5 21 00	ا				.\
	i	C ₁	. 15 41	16							M	5 31 30 5 36 0)	*200		-	:
		LREP	16 58 17 17 .	. 20) [Ç	5 41 . 6 06 .	.]			-	•
	ı	1 # 11		Trace a		le.		-1		•	. 4		Trace a	nolita	đe.		

MONTHLY WEATHER REVIEW.

TABLE 2.—Instrumental reports—Continued.

Date.	Char- acter.	Phase.	Time.	Period T.	Amplitude.	Dis- tance.	Remarks.	Date.	Char- acter.	Phase.	Time.	Period T.	Amplita	A _N	Dis- tance.	Remarks.
HAWA	AII. U	S. C.	& G. S.	Magn	etic Observa	ory, E	Ionolulu—Con.	Porto I	Rico.	<i>U. S.</i>	C. & G.	S. M	agnetic	Obser	vatory	, Vieques—Con.
1920. Sept. 21		P eS eL M	H. m. s. 17 56 54 18 01 00 18 04 00 18 13 18 18 17	Sec. 17 17 19 19	μ μ *400	Rm.		1920. Sept. 20		L _N	15 49	Sec. 23 26 24 18 18	μ 70	μ 60	Km.	
23		F P S eL M	19 11 5 48 18 5 52 48 5 55 48 6 11 42 6 13 54	17 17 17 17 17 17	*200		L difficult to place.	24		F _N	16 44 16 59 17 17 21 59 46 22 03 45 22 05 13	18 16 6 13				Long waves not present on NS. P and S both
24		F eS L M C F	6 57 22 16 30 22 29 06 22 36 48 22 39 23 30	17 17 17	*900		This interpretation adopted after comparison with Tucson and Vie- ques.				22 05 24 22 06 22 11 22 28	10				well marked.
	I			L	1	<u> </u>			Mass	ACHUS	etts. <i>E</i>	Tarvara	Univer	sity,	Cambi	ridge.
MARY 1920. Sept. 8	LAND.	U.S.	H.m.s. 2 10 44 2 20 45 2 42	S. 1	Magnetic Obs	Km.	L waves not clearly present. Nothing on E-W. P tremors faint in	1920. Aug. 3		OP _N eL _N	H.m.s. 19 57 15 20 08 24.5 20 17 32.5 20 31 32.5 20 36 20 40 ca. 21 44 ca.	Sec. 3 3 58 20	μ	μ	Km. 7,770	69° .93 arc; E giver P and S less dis- tinct; M phases distorted by winding drums.
		en eSn Le Ln Me Mn Ce Cn Fe	15 04 55 15 16 09 15 38 11 15 39 49 15 46 36 15 51 27 15 50 16 00 16 24	28 18 17 18 17 17	90290		both components.	13		6 _N F 6 _N F	2 13 04 2 14 37 2 21 24 2 23 56	3				Possibly only group of micros not recognizable as possibly sels micro weak micro were running before and after
27		Fn en eL. Mn Cn Fn	17 21 5 42 28 5 42 35 5 42 43 5 43 46	17 12 9	40		L waves not clearly present on E-W.	20		O? Sm L?? L L L F	16 55 49 17 05 23 17 17 00	20 25 18 16 16			9,315?	these phases. Distance from L-S L difficult to fix Record indistinct on NS.
Port	o Rico	. <i>U.</i> 8	8. C. &	G. S.	Magnetic	Observ	atory, Vieques.	21		L. ?	21 32 20 21 34 36 21 38 37	. 15 15				Not legible on N Periods decrease
1920. Sept. 8		ePR _N . ePR _B . S _E F _N	H.m.s. 2 06 34 2 06 52 2 15 06 2 20 2 29	Sec.	μμμ	Km.	L waves not present; interpretation adopted after comparison with Tuscon and Hon-	26		O?iPm?sw	00 E0 EE	2 6 6 7			8,050?	rapidly to 8 secs Deduced term from E.; L-0 8050 kms. give VL 231.6 kms. pe sec. S _N doubtful
20		ePR1m ePR1m ePR2m iSR1m.	15 01 36 15 01 35 15 05 20 15 18 09 15 40 06	I			olulu. This interpretation adopted after comparison with Tucson and Honolulu.	27		eLn eLn Ln Ln Fn	23 33 10 23 33 17 23 36 30 23 39 00	26 25 20 20 15				sec. S _N doubtful ly fixed. iPS 23 10-18. Great in regularity in pe riod after initia L.

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